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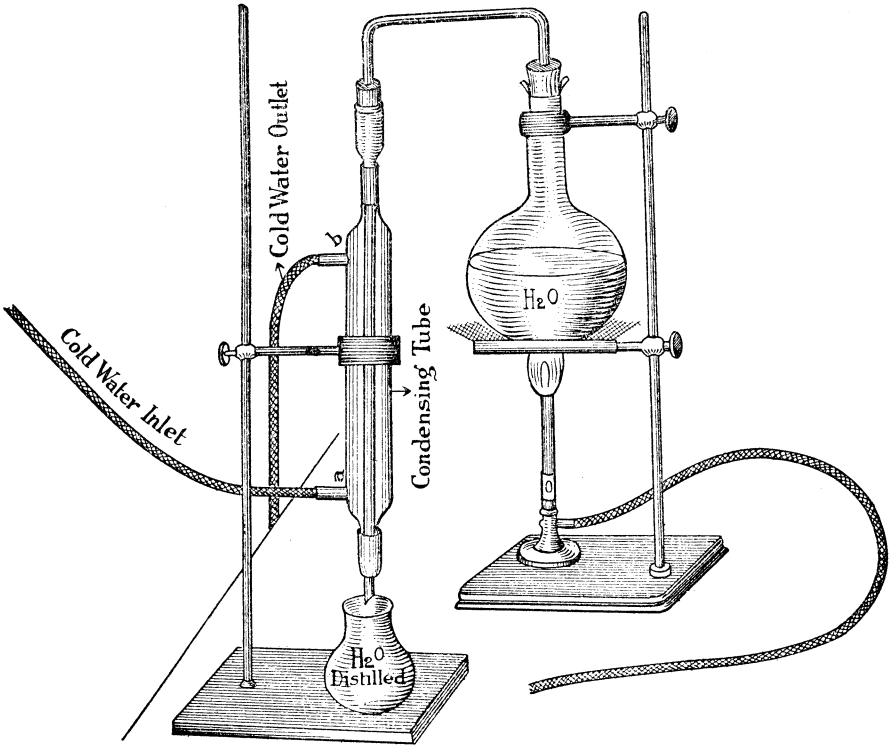
A PRACTICAL DISTILLING APPARATUS

By Elsa Schmidt, B.S., R.N.

Most of our schools of nursing are not endowed with very elastic funds for procuring adequate laboratory equipment for the teaching of the scientific subjects in the preliminary course and, primarily for this reason, inexpensive, simple devices must take the place of expensive apparatus. The simple outfit here described has been used at the City Hospital School of Nursing, Blackwell's Island, and has been found very satisfactory.



The accompanying diagram illustrates the method of putting the apparatus together. The flask containing the water for distillation is tightly stoppered with a perforated rubber stopper into which a 12-inch piece of glass tubing is snugly fitted. This glass tube is bent at a suitable angle and is connected with the condensing tube. The Bunsen burner is placed under the metal ring, which is securely fastened to the support. The flask, likewise clamped tightly to the ringstand, is placed upon a piece of wire gauze which serves to spread the heat given off from the flame of the Bunsen burner. The condensing tube consists of two glass tubes, the inner for the purpose of receiving the evaporated water, and the outer, surrounding completely the inner, containing a constant flow of cold water, admitted through a piece of rubber tubing at "a," while a second piece of rubber tubing forms the outlet at "b." In this way the evaporated water in the inner glass tube is readily cooled and is again transferred to its liquid state. The condensing tube may be clamped to the same support as the flask or to a second one, as illustrated in the diagram.

To distil water for experimental, as well as practical, purposes the flask is filled with water, which is quickly brought to the boiling point. The first portion of the distillate, containing the volatile or gaseous impurities, such as chlorine, ammonia and hydrogen sulphide is rejected, and the balance is collected in a sterile bottle.

From an educational standpoint, this distilling outfit is quite valuable. Being an all glass structure, it furnishes the best means for illustrating in a practical way the principles of a physical change, as the students can observe the change from the liquid to the gaseous state, and back to the liquid, in a substance which they all know so well. Moreover, it illustrates the method of water purification by distillation in a very vivid way, especially if the water has been contaminated by colored, dissolved organic matter, suspended particles of insoluble material, and other gaseous and inorganic substances. The entire apparatus is readily put together and occupies very little space in the laboratory. The different parts can be purchased in any chemical supply house at a very moderate price. The quality of the resulting product is perfect and the cost of operation is practically nothing, as very little gas is used in the process. When cleaning is necessary, the different parts can easily be taken apart and thoroughly cleansed. No further attention is required for the satisfactory functioning of this apparatus.

This distilling outfit has not only been found very valuable as a teaching device, but through its use we have been able to prepare all the distilled water needed for teaching purposes and this has made us, at least in this respect, entirely independent of the hospital supply.

AN IMPROVISED BLACKBOARD

By Elsa Schmidt, B.S., R.N.

The problem of obtaining sufficient blackboard space for effective teaching is an ever present one in most of our schools. Portable blackboards are expensive, are never large enough, and often the surfaces are of such a nature that it is almost impossible to use chalk effectively upon them.